# EXHIBIT A

## Disclosure AUS8-2001-0799
Prepared for and/or by an IBM Attorney - IBM Confidential

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Required fields are marked with the asterisk ( * ) and must be filled in to complete the form .

## *Title of disclosure (in English)
<TIS>Telco Voice Identification: Voice Caller ID (ViD)

## Summary

| | |
|---|---|
| Status | Search Results Shipped |
| Processing Location | AUS |
| Functional Area | 60 - NCS - OPERATING SYSTEM SOLUTIONS (M.Tempelmeyer) |
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| IDT Team | Lupe Valadez/Austin/Contr/IBM; Leonnel Machuca/Austin/Contr/IBM |
| Submitted Date | ████████ |
| Owning Division | NCS |
| Incentive Program | |
| Lab | |
| Technology Code | |
| PVT Score | No PVT score has been calculated.To calculate a PVT score, press the 'Calculate' button. |

## Inventors with a Blue Pages entry
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| Winters, S.L. (Scott) | 584516 | 7J/3ICA | 678-1501 | Tempelmeyer, Mark |
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Select Functional Area

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AUS8-2001-0799 <TIS>Telco Voice~ .tification: Voice Caller ID (ViD) - continued

**Response Due to IP&L :**

**\*Main Idea**
1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

This disclosure will cover the problem set described, it is intended as one of the two primary (basis) invention sets for the Telco Disclosure series. The other set is entitled <TIS>Telco Voice Identification: Reverse Caller ID (rViD)

## Forward (Standard) Caller Voice ID Systems <ViD>

- Caller ID does not work because it is not the ID of the caller. Currently, the ID that is displayed at the destination is the ID of the Device originating the call (and the person who pays that bill is usually used as that ID).
- It would be an improvement on this system to allow the receiver of the call knows who is actually calling at the time of call, before the call is answered. Or put another way:
- Caller ID is not as useful a feature as it could be because it is tied to the device the caller is using, not the caller himself.
- People currently disable Caller ID to prevent receivers of calls from that device from seeing their phone number (thereby knowing how to reach them at anytime). The ViD eliminates that issue by showing the Caller's ID, not the Device's ID.
- Once the caller's true identity is known, additional services become possible as detailed by the related disclosures.... The details on implementing this are given below, please note however that the six independent solutions require radically different implementations and methods to achieve the same results. We recommend that the six methodologies be merged into 3 groups, Origin, Intermediary, and Destination.
- We believe optimal way to achieve this is via a ViD which is detailed below. ViD is short Voice Identifier. Admittedly Voice Identification is not new, in fact we are relying on the known arts in this area, however the ways in which it is being put to use solve unique problems. Please note this is very different from Sprints Voice Dialing.

2. How does the invention solve the problem or achieve an advantage,(a description of "the invention", including figures inline as appropriate)?

ViDs will be disclosed as abstract packets of information sent over one of the existing or some new protocols. Further, the packets can be implemented using XML or some other tagging/markup language. In this fashion the receiving, sending and intermediary systems that need to effect the ViD to support these inventions will simply be protocol handlers with a parser and associated code to effect the inventions.

Tie the Caller's ID to the Call itself. Correctly Identify the caller

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AUS8-2001-0799 <TIS>Telco Voice—ontification: Voice Caller ID (ViD) - continued

# Multiple Systems for Networked Voice Identification (VID)
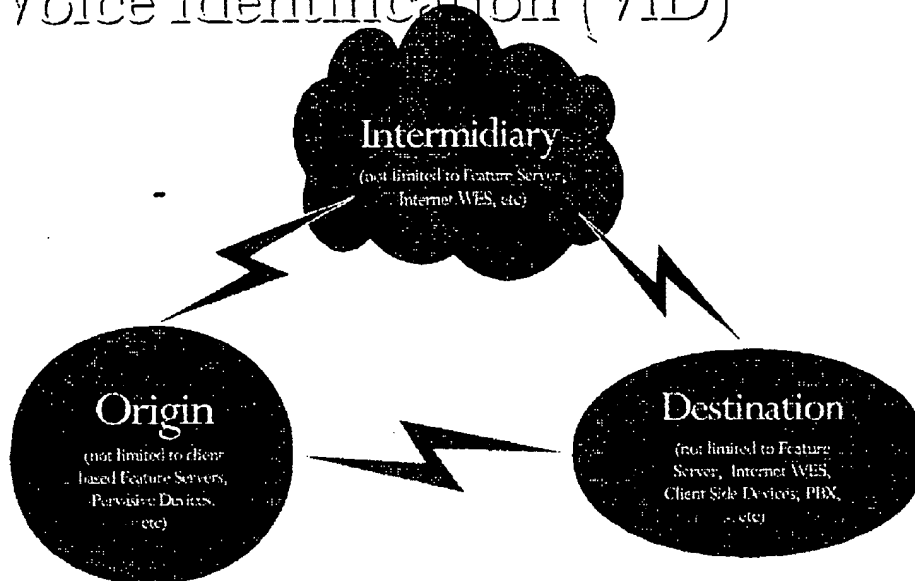


Origin (A) and Destination (C) are voice capable devices. Intermediary (B) is a telecom network device that participates in the setup of a call originated by A to C.

For the case where Origin Device (A) is owned by user Andrew and Destination Device (C) is owned by Carol, when Andrew places a call to Carol, through Intermediary Device (B), the Caller ID function on Carol's phone will display Andrew as the caller. However, if another person is using Andrew's device, such as Donald, Andrew's name will still appear on Carol's device.

This problem can be addressed by tying the Caller Identification to the person placing the call rather than the device placing the call. While there is some known and similar art in this area with respect to Smart Cards or similar technologies, such solutions require new hardware or that the existing hardware be retrofitted with "reader" devices for the Smart Cards.

A better solution is to do discrimination of the caller's voice, removing the requirement of hardware changes to existing or new devices end point devices, and to support universal access for all users (a person does not have to have separate identification cards to work with different devices). This discrimination would uses voice patterns and recognition to identify the caller (Voice Identification - VID ), instead of using the device's identification.

The Destination person (receiver) can be and needs to be identification to the originator (Reverse caller ID). Announcements of who the call is intended for should be performed.

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AUS8-2001-0799 <TIS>Telco Voice-identification: Voice Caller ID (ViD) - continued

## Implementations

Each implementation will be split into a separate disclosures since they are radically different implementations. More specifically, the following 3 "implementations" are to be used to solve each of the Problem Spaces we will define. In total one might expect each of these solution bases to be used in individual patents. <this will be a X3 multiplier against the problem set>

## Destination Device Discrimination

One implementation may include local storage in Carol's device (C) which contains voice samples, and like. The address book lookup capability of current devices would be used in conjunction with the voice sample stored locally and the incoming sample for purposes of determining the true identity of the caller. Such information can then replace embedded Caller ID from the device or be combined with the embedded Caller ID for the device (covered later). When a call is placed to the device, the device answers the call and plays an announcement requesting the person to speak their name. The voice is compared with the address book content to display the person calling, and allowing Carol to make a decision about whether to participate in the call or to hang up.

That is to say it is possible to have local storage at point C which contains a sample of calling peoples voice (perhaps their name), and to compare this sample to the one that comes across live in a new connection form A to B to C. In such a scenario, if user Doug places a call on Andrews device (A) to Carol's device (C), Carol's device C can prompt as an answer to the caller to state their name, and compare that name to the local samples to confirm the ID. Once the caller's ID, or lack their of is attained, filtering can then be selectively applied. If the voice does not match any address book entries, Carol's phone may still display the device number calling and that the voice is not recognized.

Combining the true identity of the caller with the device they are calling from would then yield a Call Context that may help the destination infer additional information about the nature of the call prior to answering it. For example, if Donald calls Carol from Andrew's work phone, it might be inferred that Andrew is also present and/or that the call is work related. This idea can, and will be taken further in the disclosure **XXX**.
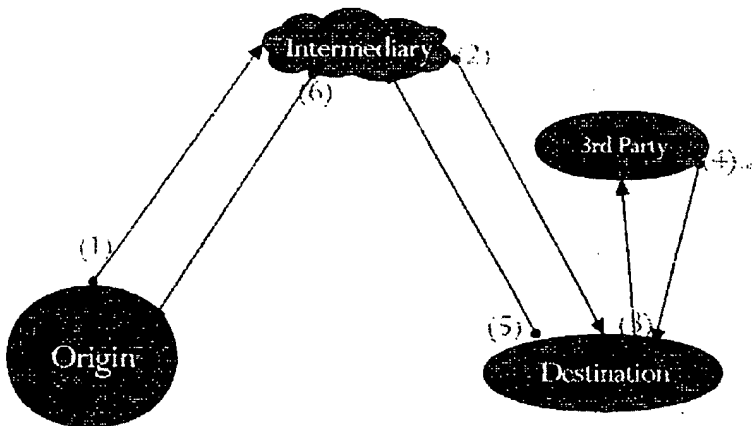
**Third Party Assisted.** Destination device may be a two part discrimination device (e.g. it connects to something external to the actual Destination device itself), Local storage downloadable from network...

AUS8-2001-0799 <TIS>Telco Voice̲̲ ̲ ̲tification: Voice Caller ID (ViD) - continued

## Destination ViD Discrimination
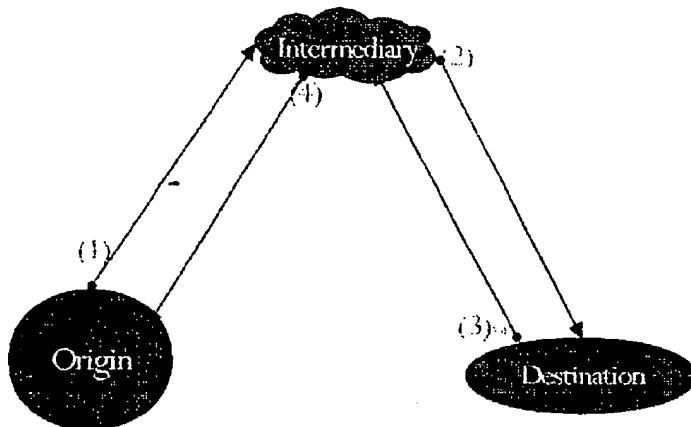


## 3rd Party Assisted Destination ViD Discrimination



## Network Intermediary Discrimination

One implementation may include storage in the Network (B) which contains voice samples, and like. These stored sample would be against the incoming sample to determine the Caller's true identification. Such information can then replace embedded Caller ID from the device or be combined with the embedded Caller ID for the device (covered later). Conveying the true identity of the person calling then allows Carol to make a more informed decision about whether to participate in the call or not.

Combining the true identity of the caller with the device they are calling from would then yield a

Page 5                                    IBM Confidential

AUS8-2001-0799 <TIS>Telco Voice↵_↵ntification: Voice Caller ID (ViD) - continued

Call Context that may help the destination infer additional information about the nature of the call prior to answering it. For example, if Donald calls Carol from Andrew's work phone, it might be inferred that Andrew is also present and/or that the call is work related. This idea can, and will be taken further in the disclosure **XXX**.

**Third Party Assisted.** Intermediary device may be a two part discrimination device (e.g. it connects to something external to the actual Intermediary device itself), Local storage downloadable from another system...

## Intermediary ViD Discrimination
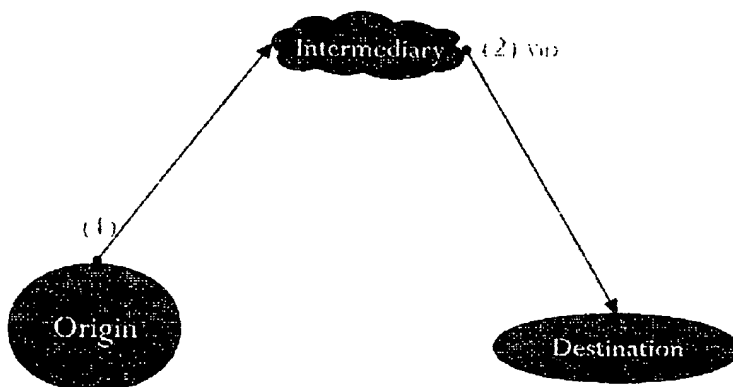
## 3rd Party Assisted Intermediary ViD Discrimination

Page 6                                    IBM Confidential
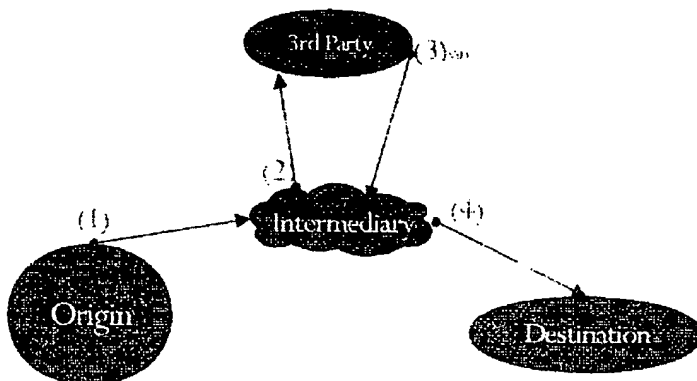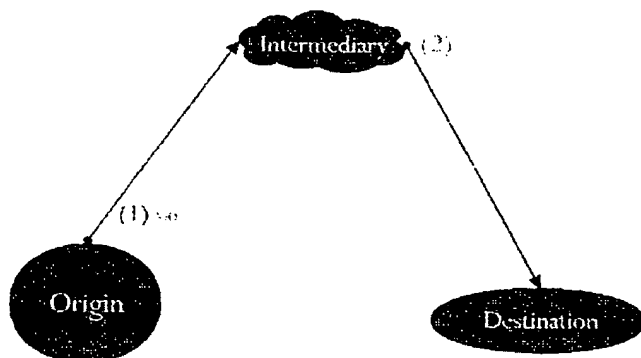
AUS8-2001-0799 <TIS>Telco Voice~c_ification: Voice Caller ID (ViD) - continued

## Origin Device Discrimination

One implementation may include local storage in the origin device (A) which contains voice samples, and like. The origin device would need to be a trusted device of the network, capable of authenticating the user with minimal chance of ID spoofing. These stored samples would be against the incoming sample (provided by the user at the time of use) to determine the Caller's true identification. Such information can then replace embedded Caller ID from the device or be combined with the embedded Caller ID for the device (covered later). Conveying the true identity of the person calling then allows Carol to make a more informed decision about whether to participate in the call or not.

Combining the true identity of the caller with the device they are calling from would then yield a Call Context that may help the destination infer additional information about the nature of the call prior to answering it. For example, if Donald calls Carol from Andrew's work phone, it might be inferred that Andrew is also present and/or that the call is work related. This idea can, and will be taken further in the disclosure **XXX**.

**Third Party Assisted.** Origin device may be a two part discrimination device (e.g. it connects to something external to the actual Origin device itself), Local storage downloadable from network...

Origin ViD Discrimination

AUS8-2001-0799 <TIS>Telco Voice ntification: Voice Caller ID (ViD) - continued

## 3rd Party Assisted ViD Discrimination



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